

ABSTRACT OF THE DISCLOSURE

Systems and methods are described for increasing data transfer efficiency between networks. The invention being particularly well suited when establishing connectivity between wireless networks, such as based on IEEE 802 standards, and traditionally wired network protocols (often referred to as internet protocols), such as TCP/IP and UDP. The invention provides formatting of network packets and then processing of network packets according to one or more optimization processes. One optimization process comprises performing partial packet retransmissions to increase network efficiency, especially in high bit error rate networks such as wireless networks. Another optimization process comprises suppressing unnecessary packet acknowledgements, therein reducing burst traffic and saving substantial overhead in lossy networks. Additional aspects of the invention provide further benefits. The invention may be implemented within the MAC layer of a network interface, in particular within wireless network interfaces which are being increasingly utilized for both home and office short range interconnectivity.